VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Once Amended) A method for producing a mixture of ~~a~~ nucleic acids, said method comprising:

(a) providing an array of distinct single-stranded probe nucleic acids of differing sequence where each distinct probe present on said array comprises a constant domain and a complement variable domain;

(b) ~~contacting~~ hybridizing ~~said array of single-stranded probe nucleic acids with~~ nucleic acids complementary to said constant domain ~~under hybridization conditions~~ with said array of single-stranded probe nucleic acids to produce~~, whereby~~ a template array of overhang comprising duplex nucleic acids ~~is produced~~, wherein each overhang comprising duplex nucleic acid of said array comprises a double-stranded constant region and a single-stranded variable region overhang; and

(c) subjecting said template array of overhang comprising duplex nucleic acids to primer extension reaction conditions under conditions sufficient to produce said mixture of nucleic acids~~;~~

~~whereby said mixture of nucleic acids is produced~~.

5. (Once Amended) A method for producing a mixture of a plurality of distinct deoxyribo-oligonucleotides of differing sequence, wherein each distinct ~~constituent~~ deoxyribo-oligonucleotide of said plurality comprises a different variable domain V, said method comprising:

(a) providing an array of a plurality of surface immobilized distinct single-stranded probes, wherein each distinct surface immobilized single-stranded probe present on said array is described by the formula:

surface-L-R-F-cV-5'

wherein:

L is an optional linking domain;

R is a recognition domain;

F is a functional domain; and

cV is a complement domain having a sequence that hybridizes under stringent conditions to a variable domain of one of said distinct oligonucleotides of said plurality;

(b) contacting said array of a plurality of surface immobilized distinct single-

stranded probes under hybridization conditions with a population of nucleic acids of the formula:

5′-cR-cF-3’

wherein:

cR is the complement of R; and

cF is the complement of F;

whereby a template array of overhang comprising duplex nucleic acids is produced, wherein each overhang comprising duplex nucleic acid of said array is described by the formula:

surface-L-R-F-cV-5’

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5′-cR-cF-3’; and

(c) subjecting said template array of overhang comprising duplex nucleic acids to primer extension reaction conditions~~;~~

~~whereby~~ to produce said mixture of a plurality of distinct deoxyribo-oligonucleotides of differing sequence, wherein each distinct constituent of said plurality comprises a different variable domain V~~, is produced~~.

8. (Once Amended) The method according to Claim 5, wherein said recognition domain is ~~a~~ recognized by a restriction endonuclease.

14. (Once Amended) The assay according to Claim 13, wherein said target nucleic acids are labeled.

15. (Once Amended) The assay according to Claim 13, wherein said assay further comprises washing unbound target away from the surface of said array.